

PAGAN newsletter 1988

In-situ testing of Pagan brick walls.

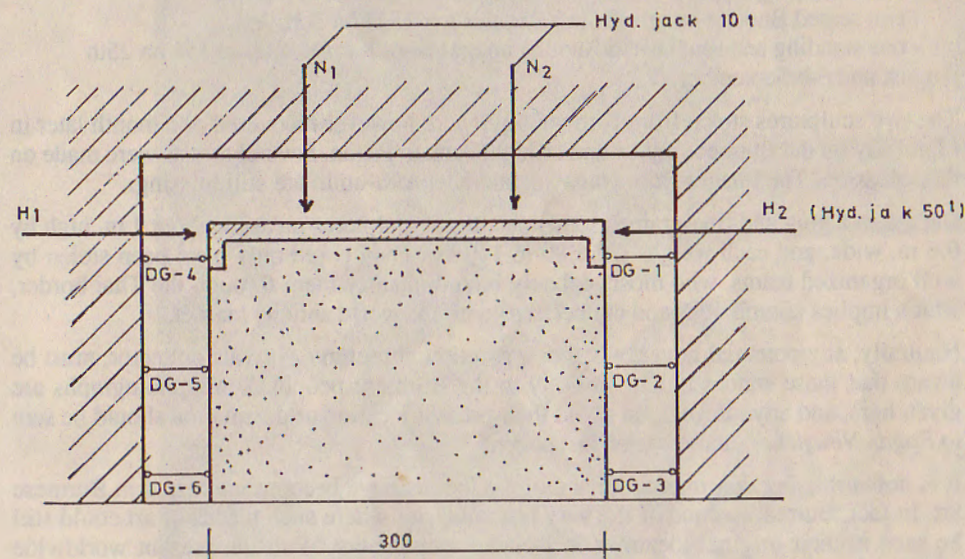
Preliminary physical tests were conducted in 1982 on the bricks and masonries of Pagan, and were used by Iziis (Institute of Earthquake Engineering and Engineering Seismology, Skopje), together with the results of ambient vibration tests to suggest suitable methods for the reinforcement and strengthening of selected monuments against future earthquakes. Under the present project, these methods were implemented on an experimental basis on several monuments (see previous Pagan Newsletters).

These laboratory tests were however insufficient to provide a realistic picture of the actual strength and resistance of Pagan masonry, because they were conducted on isolated specimens. The testing of bricks fails to take into account the mud mortar own characteristics and its adhesion to bricks, and testing of detached masonry cubic blocks was inconclusive because the blocks had lost most of their cohesion during the transport to Rangoon.

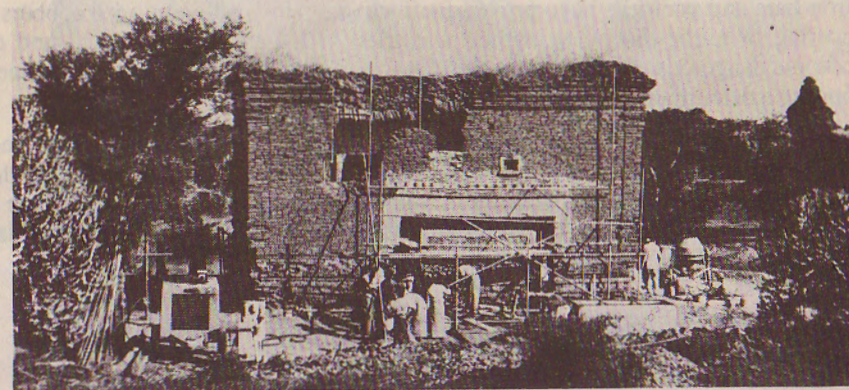
It was therefore decided to perform in-situ tests on actual brick walls. A half-ruined monastery (No. 2094, north of Htilominlo Temple), of the type most common in Pagan, was selected, and its west and north walls, around 1.4 m. wide, were specially prepared by isolating a large portion of each wall, square on north, and rectangular on west. Reinforced concrete capping was done for uniform application of forces, and calibrated hydraulic jacks were used vertically (weight simulation) and horizontally (seismic simulation), according to programmed cycles. Displacements were monitored with dial gages, and the tests were performed up to the wall failure at which point severe diagonal cracks appeared, but were stopped before total collapse occurred. The plan now is to repair the cracks by injections and to repeat the testing programme on the repaired wall to evaluate the effectiveness of injections.

The tests were implemented in January 1988 by Dr. P. Gavrilovic and engineers from the Construction Corporation and the Rangoon Institute of Technology.

Results have shown that the masonry strength was greatly underevaluated by the previous laboratory tests. The systematic injection process will thus be unnecessary on uncracked masonry, and injections will be restricted to the repair of cracked walls. Concurrently, other reinforcement methods already tested in Pagan, such as steel ties or reinforced concrete belts, will be carried out in more monuments.



Monastery 2094 : Western test-wall, application of forces and location of dial gages.



Monastery 2094 : testing process on west wall.

STOLEN FROM PAGAN

Several statues were stolen in 1988 from Pagan temples :

- three standing Buddha images from Nagayon 1192 on 5th May;
- two seated Buddha images from Kubyauk-gyi 1323 on 20th June;
- one standing and four seated Buddha images from Kyaukku-umin 154 on 25th

August and 6th September.

The two sculptures stolen from Kubyauk-gyi were however recovered one month later in Mandalay by the Burmese police and brought back to Pagan. Several arrests were made on this occasion. The images from Nagayon and Kyaukku-umin are still missing.

Carved in a grey and fine-grained sandstone, these sculptures measure about 1 m. high by 0.6 m. wide, and each weighs from 80 to 110 kg. They could only have been stolen by well organized teams, who most probably intend to carry them through the Thai border, which implies complicities and connections with the world antique market.

Naturally, any potential buyer, whether institution, museum or private collector, must be aware that these statues belong entirely to the Burmese people. Some photographs are given here, and any information about their present location or destination should be sent to *Pagan Newsletter* (addresses on last page).

It is not surprising that international antique looters have become interested in Burmese art. In fact, Burma was one of the very last countries where such pieces of art could still be seen in their original locations in isolated monuments. With the present worldwide development in the traffic of antiquities, this is no longer possible and better protection must be provided.

Iron bars and padlocks have proved ineffective against well equipped robbers, and the posting of night watchmen, which was tried in Pagan, is insufficient and can even become dangerous : in remote temples far away from the villages, one or two men cannot oppose a determined gang who will not stop at violence.

As a temporary measure, several stone images have been stored in the Pagan Archaeological Museum, where more efficient protection can be provided. In the future, the only option will be to keep these images in the Museum, and to replace them by copies in their temples of origin. High quality moulding with modern material can be carried out in Pagan to achieve accurate duplication.



The three stone Buddha images stolen from Nagayon temple.



Two stone Buddha images stolen from Kyaukku Umin temple.

A cloth painting from Pagan.

On 31 March 1984, during the field work for the inventory of Pagan monuments, a painting on cloth was discovered, carelessly folded and rolled up on the floor, in a corner of a small room in temple No. 315.

Badly deteriorated and reduced to some 30 fragments of various sizes, the cloth painting was for some time kept in a glass showcase at the Archaeology Museum in Pagan. Given its fragility, its beauty and its historical uniqueness, as well as the unavailability of appropriate equipment and materials for conservation on the site, it was decided to take the cloth painting abroad for restoration and preservation. A contract was made by Unesco with restorers D. Zarri and C. Giantomassi, already involved in the conservation of mural paintings in Kubyauk-gyi temple, and the restoration process was carried out in their laboratory in Rome in 1986-87.

The support is a cotton cloth with a fairly tight perpendicular weave, 81.5 cm. wide from selvage to selvage and 136 cm. tall. The cloth was prepared front and back with a thin whitish layer, probably of gypsum or light clay. One can see traces of a preliminary drawing executed with a black pigment directly onto the preparation. The painted layer shows lively and luminous colours spread in compact fields, the figures being outlined with light washes of lacquer or cinnabar and physionomical details, folds in clothing, jewels, leaves, etc, being finely incised with violet or black lacquer. Pigments used include cinnabar, realgar, orpiment, vegetable lacquer, carbon black, yellow and red ochre, copper green and blue.

The advanced deterioration of the cloth and the lack of adhesion and cohesion of the painting layer imposed a complete consolidation of each fragment, and a thorough cleaning process to remove dust, traces of smoke, insect nests and spider webs.

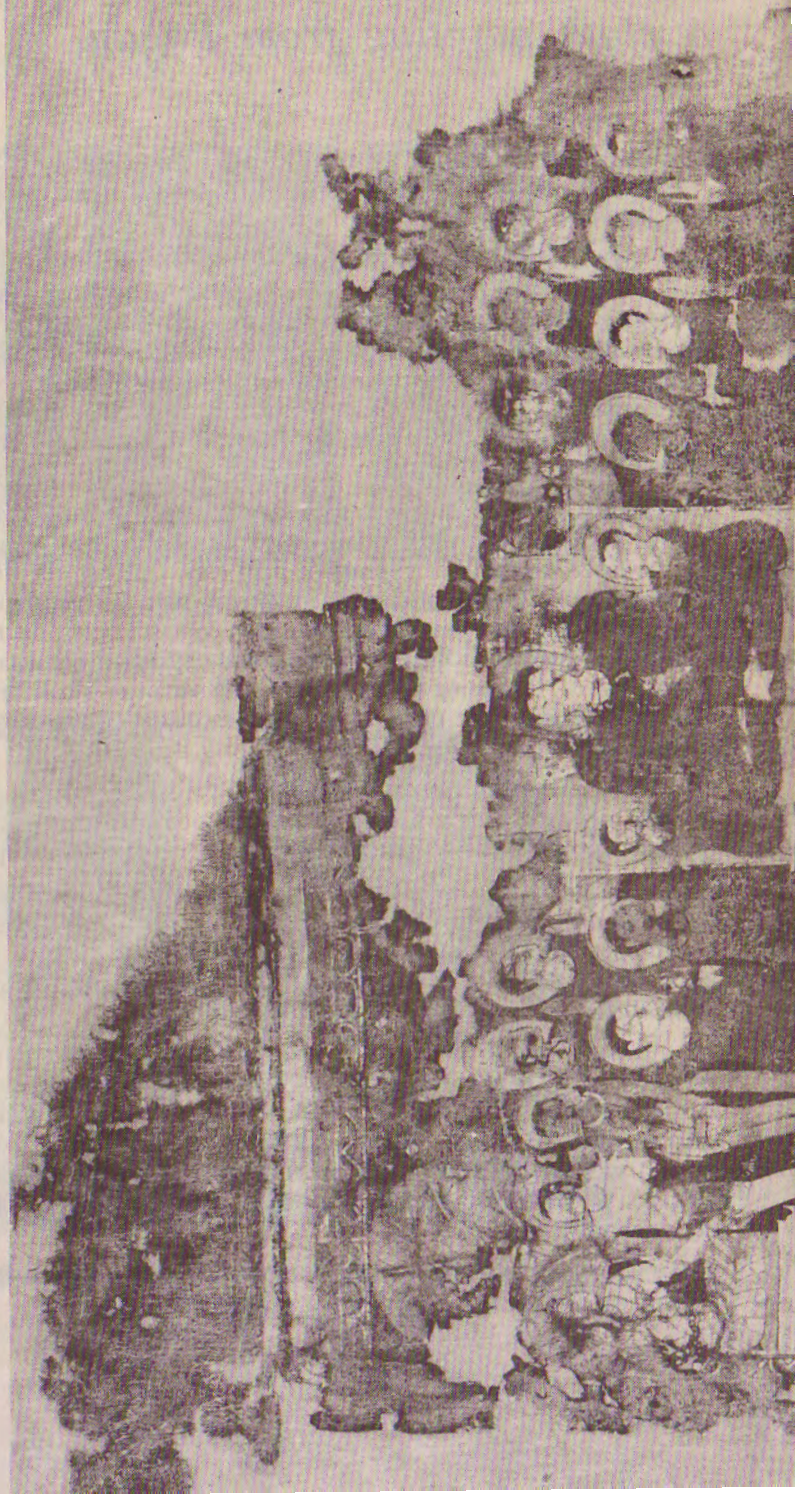
It then became clear that all fragments belonged to one painting, composed of five horizontal registers and illustrating a Jataka story. Legends are written in black under the scenes, but are unfortunately quite fragmentary. The style of the painting and the paleography strongly recalls the mural paintings of the Loka-hteikpan 1580 temple, thus suggesting a date in the first half of the 12th century AD.

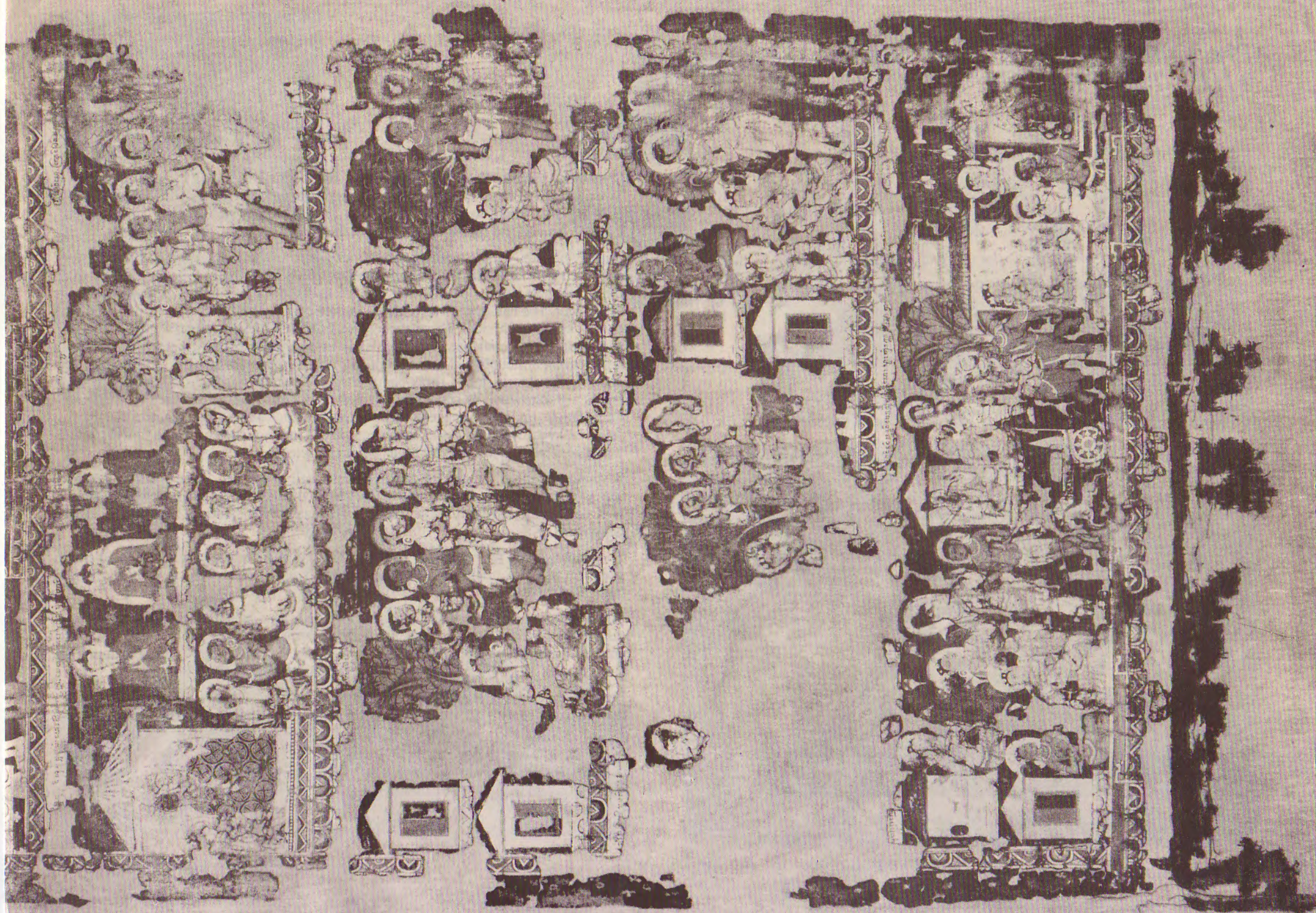
All fragments were fixed on a new support of linen and cotton, using a compound of synthetic resins (BEVA 371) diluted at 30 % in benzene. With a melting point of 68° C., this lining allows future modifications of the painting reconstruction (particularly suitable, since the position of three small fragments could not be ascertained). The new support with the painting was then attached to a special aluminium stretcher with provision for controlling the cloth tension, and final protection was provided by a spray of Paraloid B72 at 3%.

This unique piece of Pagan period cloth painting is now back in Burma and kept at the Department of Archaeology pending its permanent exhibition.

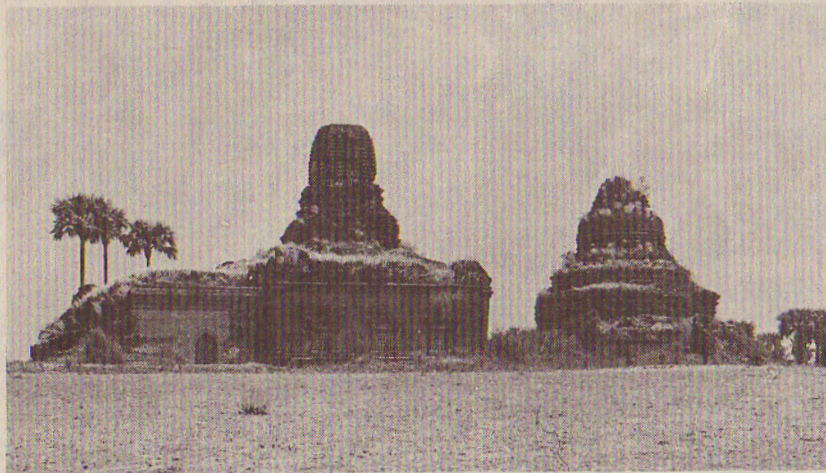


A cloth painting from Pagan.

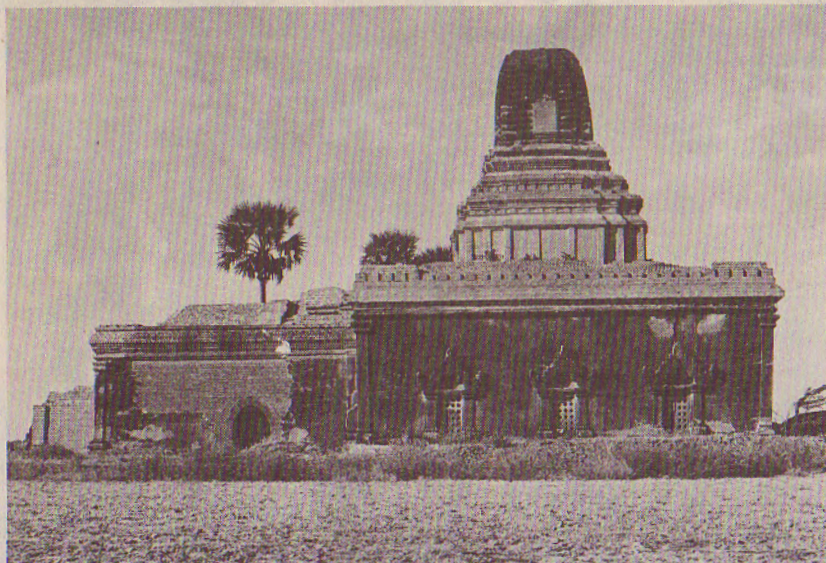




Presentation of a monument : THE TEMPLE No. 315 (201).



Temple 315 and stupa 321, from south, 1984.



Temple 315, south face after repairs, 1986.

Sometimes named "Taungbon Lokanatha", the temple No. 315 is located due south of Swezigon stupa, in an sparsely built-up area on the eastern bank of the Wetkyi-in Shwe Chaung. Two stupas were built close to it, probably later, No. 321 on its eastern side, and 322, a small and ruined one, on the south.

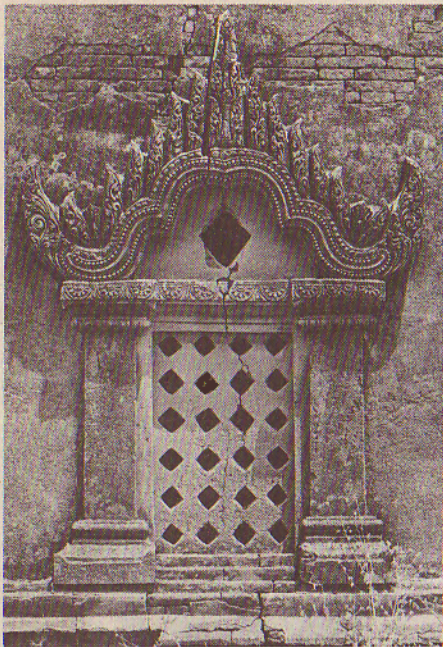
It is a two-storey temple, with a ground floor open to west by a vaulted porch and a large entrance hall with lateral porches on north and south. In a small vaulted room located on the north-west corner of this hall, was found the cloth painting described in this Newsletter. The hall opens into a barrel-vaulted corridor built around the solid core with one niche on each side. These niches are framed by highly decorated pilasters and pediments. The south one in particular is unique in Pagan, with a stucco pediment representing a mountain (Mount Meru), in which smaller niches open like caves. The main western image, today badly damaged, was a seated Buddha as usual, but the south one is a Bodhisattva, as shown by his rich body ornaments. G.H. Luce (*Old Burma - Early Pagan*, pp. 355-6) suggests identifying this image with Lokanatha, and that the five Jina or Dhyani-Buddhas could have been placed in the niches of the pediments, which would give the temple a definite Mahayanist character.

A staircase built in the thickness of the south wall of the hall leads to a smaller upper storey, composed of a single vaulted room located under the square tower. Both storeys were painted inside with illustrated scenes, but many of the paintings have deteriorated or disappeared.

The plain walls of the main body have three windows each, with finely decorated stucco pediment above a brick grid. The base, cornice and corner pilasters are plain stucco mouldings.

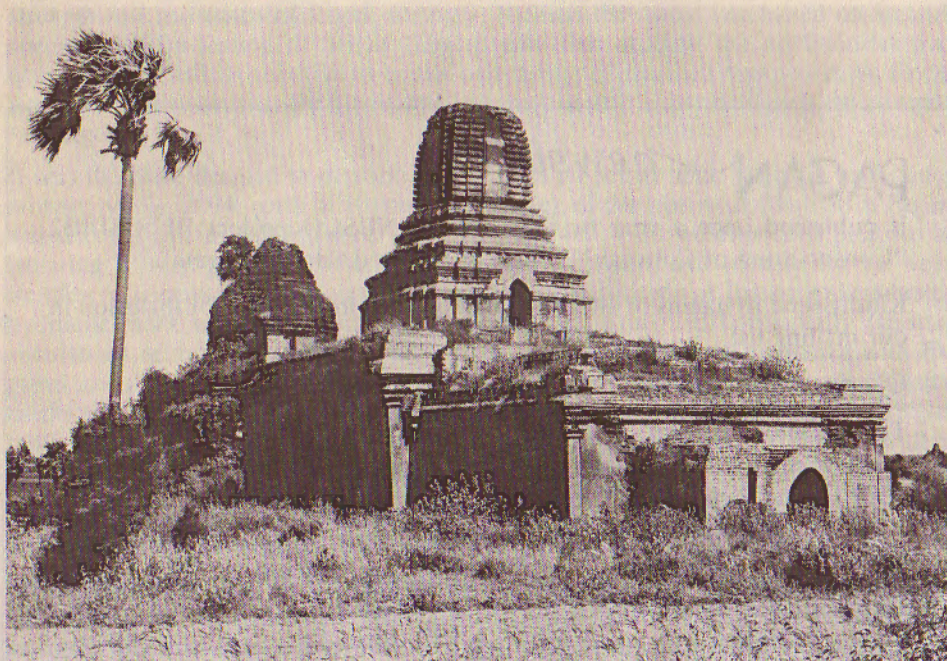
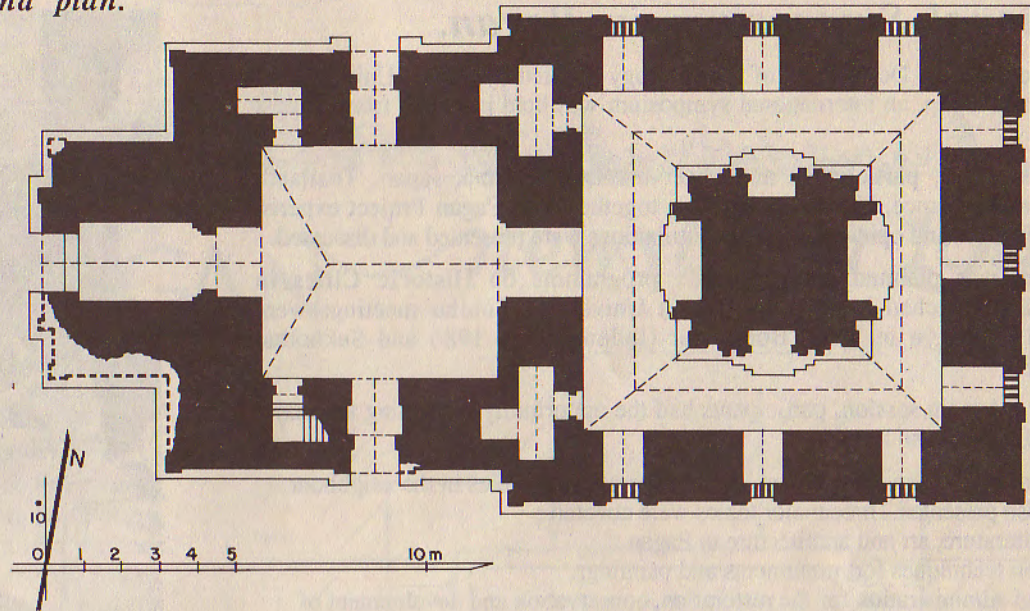
The temple was in a half ruined condition for a long time, with the vault destroyed above the eastern corridor. In the 1960s, the debris were cleared, the vaults restored and the cracked south wall repaired. The upper storey and the tower were both damaged during the earthquake of 1975, and masonry repairs were again carried out in 1984-85.

From its architectural features and the style of its paintings, the temple can be dated from the beginning of the 12th century AD, most probably during the reign of Kyanzitta.

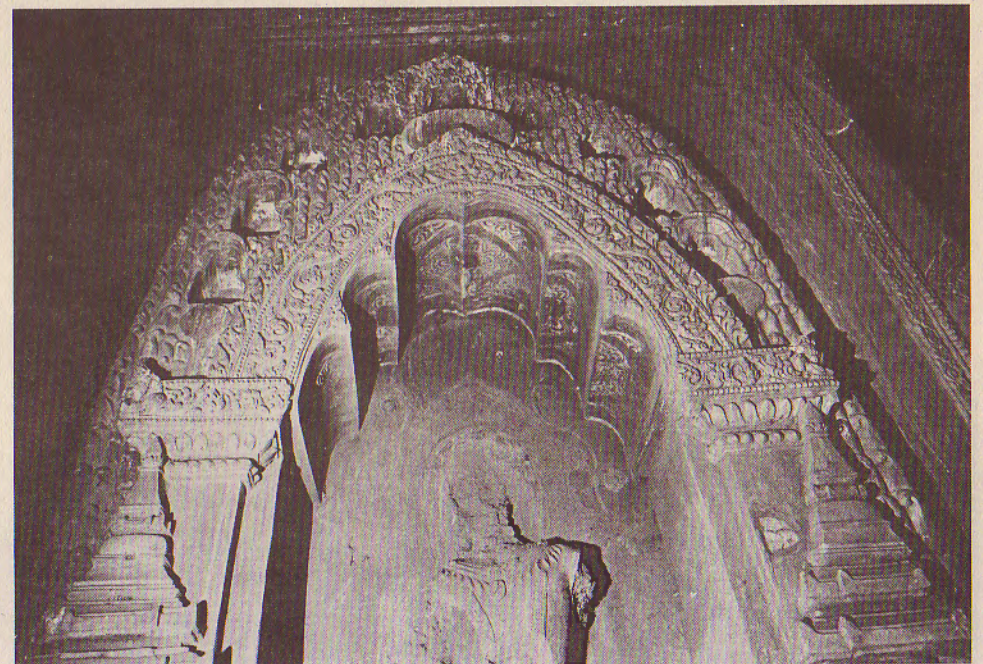


South face, detail of central window.

Ground plan.



Temple 315, from north-west, 1988.



Temple 315, solid core, pediment of south niche.

International Symposium in Pagan.

Organized by the Burmese Department of Archaeology assisted by Sophia University of Tokyo, Unesco and Undp, an international symposium was held in Pagan from August 3rd to 6th, 1988.

More than 30 scholars, participants and observers from Burma, Japan, Thailand, Indonesia, Australia, France, Undp and Unesco, together with Pagan Project experts, shared their experiences and opinions, and 20 contributions were presented and discussed.

This symposium was planned under a study programme on **Historic Cities in South-East Asia**, launched in 1985 by Sophia University. Similar meetings were previously held in Tokyo in 1985, Borobudur (Indonesia) in 1986 and Sukhothai (Thailand) in 1987.

Before and after the main session, participants had the opportunity of visiting the major monuments of Mandalay and Pagan.

Though most communications focused on Pagan, several case studies in the neighbour countries were also presented. Three major topics were covered :

- History of literature, art and architecture in Pagan.
- Conservation techniques for monuments and paintings.
- Planning and administration for the restoration, conservation and development of ancient cities.

The numerous discussions held during and between the sessions were an unique opportunity for a better appraisal and understanding of the various problems of conservation of historic monuments and cities, in Burma as well as in South-East Asia, and their integration into present and future environment.

Participants on visit to Dhammayangyi Temple, Pagan.



Paper reading session, Pagan, 4 August 1988.

PAGAN newsletter

is published once a year by the UNDP/UNESCO project BUR/81/032 "Conservation of Cultural Heritage at Selected Sites in Burma".

Kindly send us names of interested persons and institutions for inclusion in our mailing list.

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